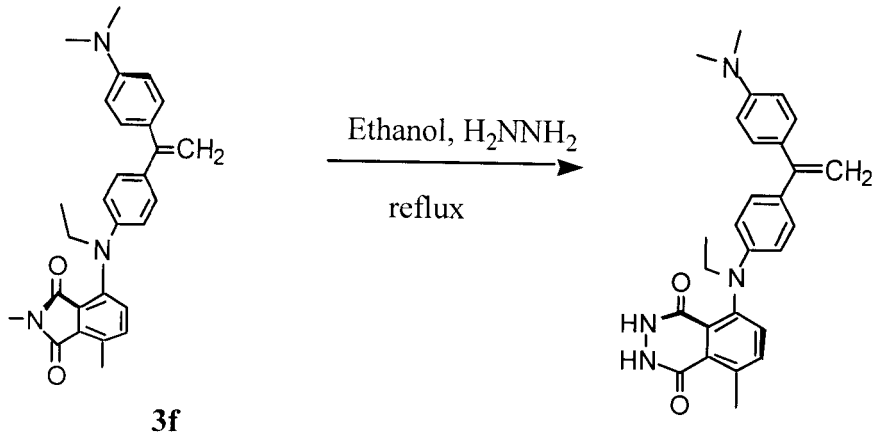

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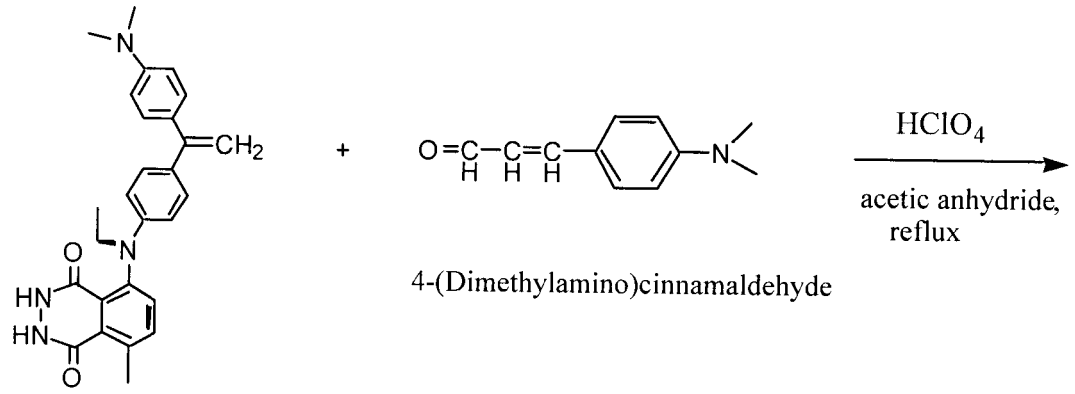
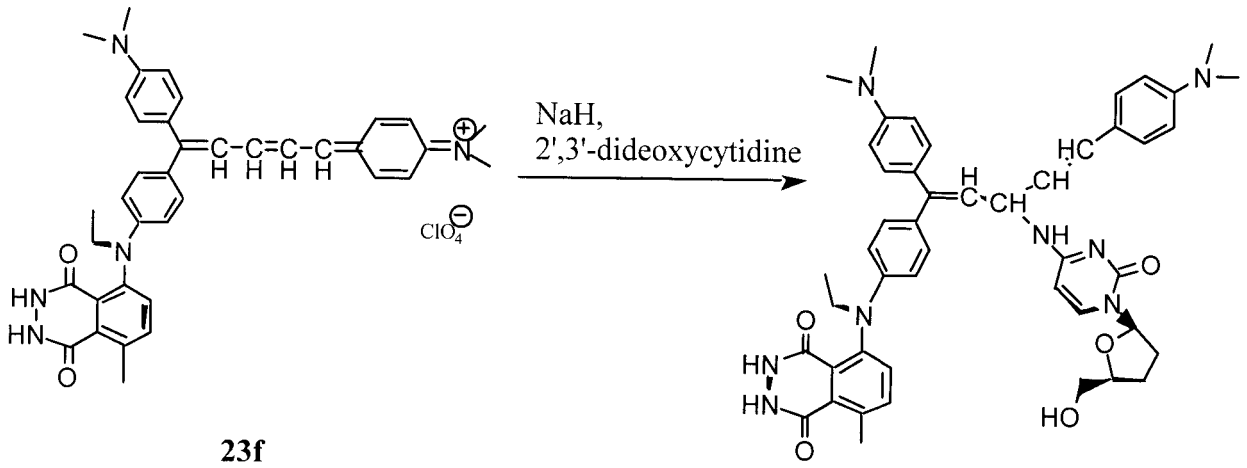


4-(Dimethylamino)cinnamaldehyde



23f

24f

157. (Original) The method of synthesis of the compound of claim 1 wherein the A

functionality comprises a phthalhydrazide such as a luminol derivative and the B functionality comprises a triarylpolymethine photochromic dye wherein A is attached to aryl groups of B comprising the steps of

forming a diaryl ketone,

forming a diaryl ketene from the diaryl ketone,

condensing the diarylketene with an aryl alkene aldehyde to form B

forming a protected aminophthalhydrazide such as aminophthalimide or aminophthalic acid diester,

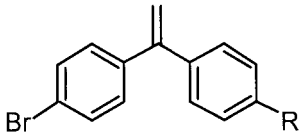
adding a hydrocarbon linker to the protected aminophthalhydrazide, and

attaching the protected aminophthalhydrazide through the molecular linker to the aryl groups of B to form the precursor aminophthalimide-linked B, and

forming the A functionality from the precursor to form A-B.

158. (Original) The method of synthesis of the compound of claim 157 wherein at least one of the diaryl ketone and diarylketene is halo-substituted and the protected aminophthalhydrazide is attached through the linker by an amination reaction.

159. (Original) The method of synthesis of the compound of claim 158 wherein the halo-substituted diarylketene precursor compounds comprises the formula of at least one of

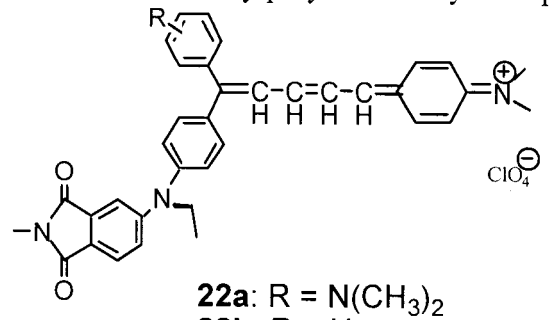


2a: R = $N(CH_3)_2$
2b: R = H
2c: R = OCH_3
2d: R = $O(CH_2)_3CH_3$
2e: R = $(CH_2)_3CH_3$, and

the halo-substituted multiarylpolymethine dyes, such as 1-(p-bromophenyl)-1,5-bis(p-dimethylaminophenyl)-pentadienium perchlorate, are be prepared by condensation with a p-aminophenyl alkene aldehyde such as p-(dimethylamino)cinnamaldehyde.

160. (Original) The method of synthesis of the compound of claim 158 wherein B is protected by reacting with an anion such as alkoxide and then coupled with A by amination of aryl halide such as the palladium-catalyzed amination of aryl halide to obtain the alkoxide-protected aminophthalimide-substituted multiarylpolymethine dye.

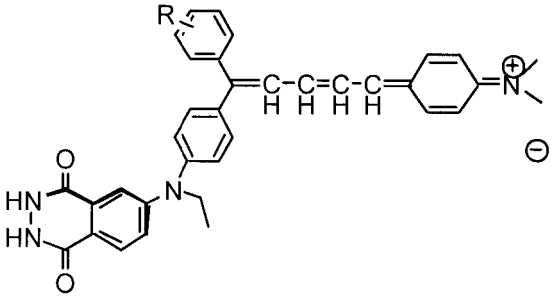
161. (Currently Amened) The method of synthesis of the compound of claim 160 wherein the protected aminophthalhydrazide-linked to B from the alkoxide-protected aminophthalimide-substituted multiarylpolymethine dye comprises at least one of the formula



22a: R = $N(CH_3)_2$
22b: R = H
22c: R = OCH_3
22d: R = $O(CH_2)_3CH_3$
22e: R = $(CH_2)_3CH_3$

162. (Original) The method of synthesis of the compound of claim 160 wherein the alkoxide-protected aminophthalimide-substituted multiarylpolymethine dye is refluxed with hydrazine in a suitable solvent such as an alcoholic solvent to convert the amino-phthalimide moiety to the aminophthalhydrazide moiety and then treated with acid to generate A-B.

163. (Currently Amended) The method of synthesis of the compound of claim 162 wherein A-B comprises at least one of the formula



23a: R = $N(CH_3)_2$
23b: R = H
23c: R = OCH_3
23d: R = $O(CH_2)_3CH_3$
23e: R = $(CH_2)_3CH_3$

164. (Original) The method of synthesis of the compound of claim 162 further comprising the step of reacting the B functionality with one nucleophilic species of a C functionality such as Foscarnet to form A-B-C.

165. (Original) The method of synthesis of the compound of claim 157 wherein at least one of the diaryl ketone and diarylketene is halo-substituted and an aminophthalhydrazide is attached through the linker by an amination reaction.

166. (Currently Amended) ~~The~~ A method of synthesis of a ~~the~~ compound ~~of claim 1~~ having the formula A-B-C

where A is a chemiluminescent moiety;

B is an energy acceptor moiety, and

C is a biologically active moiety;

wherein the chemiluminescent moiety A ~~functionality~~ comprises an active oxalate and the energy acceptor moiety B ~~functionality~~ comprises a multiarylpolymethine photochromic dye wherein the chemiluminescent moiety A is attached to aryl groups of the energy acceptor moiety B comprising the steps of

forming a halo-substituted diaryl ketone,

forming a halo-substituted diaryl ketene from the diaryl ketone,

amination of the halo-substituted diaryl ketene to give amino diarylketene,

substitution at the amino group of the ketene to forming the corresponding sulfonamide,

condensing the sulfonamide with a catalyst, and

react with oxalyl halide to form A-B.

167. (Currently Amended) ~~The~~ A method of synthesis of a ~~the~~ compound ~~of claim 1~~ having the formula A-B-C

where A is a chemiluminescent moiety;

B is an energy acceptor moiety, and

C is a biologically active moiety;

wherein the chemiluminescent moiety A ~~functionality~~ comprises an cyclized active oxalate and the energy acceptor moiety B ~~functionality~~ comprises a multiarylpolymethine photochromic dye wherein the chemiluminescent moiety A is attached to aryl groups of the energy acceptor moiety B comprising the steps of

forming a halo-substituted diaryl ketone,

forming a halo-substituted diaryl ketene from the diaryl ketone,

amination of the halo-substituted diaryl ketene to give amino diarylketene,

substitution at the amino group of the ketene to forming the corresponding sulfonamide,

reacting 2 molar proportions of a *N*-substituted aminodiarylketene with 1 molar oxalyl

halide to yield the N,N'-bisaryl oxamide, and

condensing the oxamide with a catalyst to form A-B.

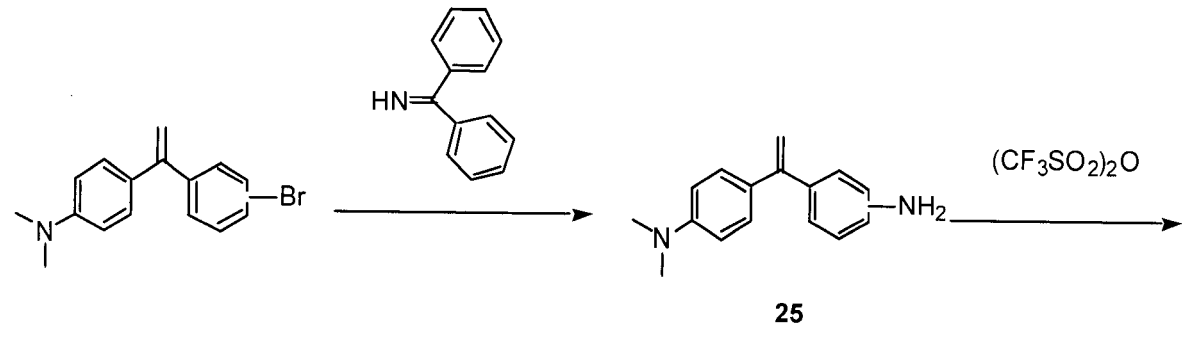
168. (Original) The method of synthesis of the compound of claim 167 wherein the halo-substituted diaryl ketene is aminated using methods such as the palladium-catalyzed amination of aryl halide with benzophenoneimine to give the amino diarylketene.

169. (Original) The method of synthesis of the compound of claim 167 wherein the amino groups of the ketene are substituted forming the corresponding sulfonamide by reacting with sulfonyl anhydride.

170. (Original) The method of synthesis of the compound of claim 167 wherein the oxamide is condensed with an orthoester such as triethylorthofomate in a nonaqueous solvent such as acetic anhydride containing acid catalyst such as tetrafluoroboric acid, to form the cyclized oxamido-tetraarylpolymethine dye comprising A-B.

171. (Original) The method of synthesis of the compound of claim 166 further comprising the step of reacting the B functionality with one nucleophilic species of a C functionality such as Foscarnet to form A-B-C.

172. (Currently Amended) The method of synthesis of the compound of claim 167 wherein the general steps are given by following representative formula



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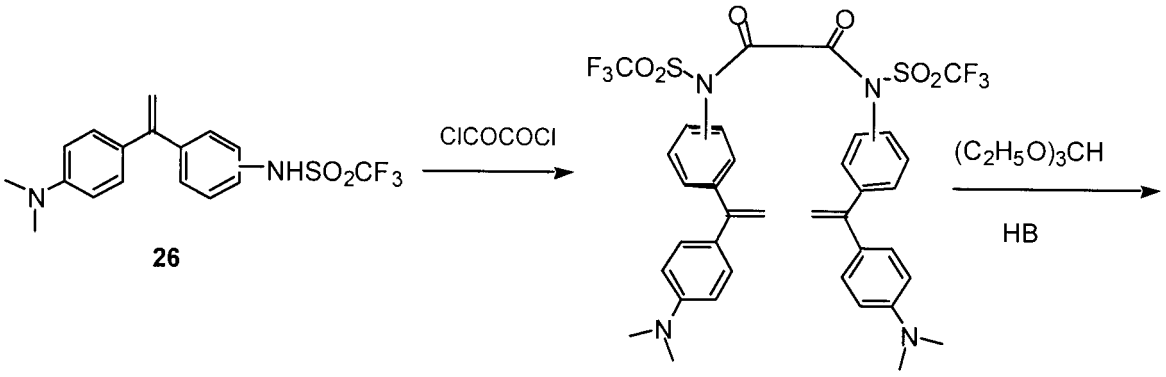

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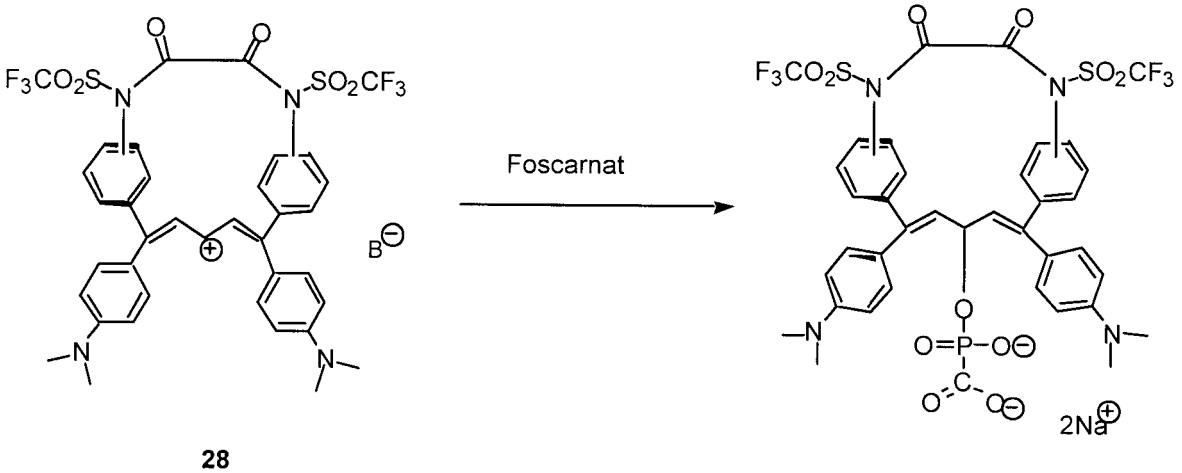

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173. (Currently Amended) The method of synthesis of the compound of claim 1 wherein the

chemiluminescent moiety A ~~functionality~~ comprises an active oxalate and the energy acceptor moiety B ~~functionality~~ comprises a multiarylpolymethine photochromic dye wherein the chemiluminescent moiety A is attached to aryl groups of the energy acceptor moiety B through a molecular linker comprising the steps of

forming B comprising a functionalized tetraarylpolymethine dye,

reacting a substituted amine with a sulfonyl anhydride to form a substituted alkyl sulfonamide,

reacting the substituted alkyl sulfonamide with an oxalyl derivative to form a substituted oxamide,

reacting the substituted oxamide with the functionalized tetraarylpolymethine dye to form A-B comprising a cyclized oxamido-tetraarylpolymethine.

174. (Original) The method of synthesis of the compound of claim 173 wherein the substituted amine is N-2-bromoethylsulfamide.

175. (Original) The method of synthesis of the compound of claim 173 wherein the oxalyl derivative is oxalyl chloride.

176. (Original) The method of synthesis of the compound of claim 173 wherein the oxamide is a N-2-bromoethyl-N-sulfonyloxamide derivative.

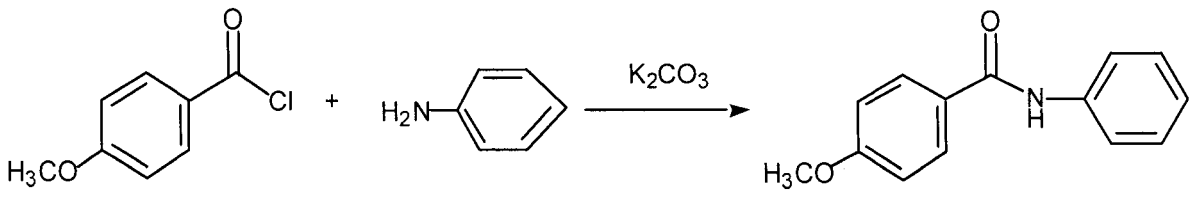
177. (Canceled)

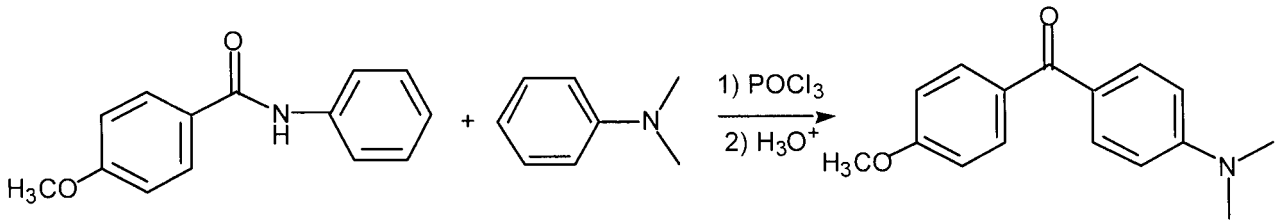
178. (Original) The method of synthesis of the compound of claim 173 wherein the functionalized tetraarylpolymethine derivative is a salt of a 1,5-bis(4-hydroxyphenyl)-1,5-diarylpentadiene derivative.

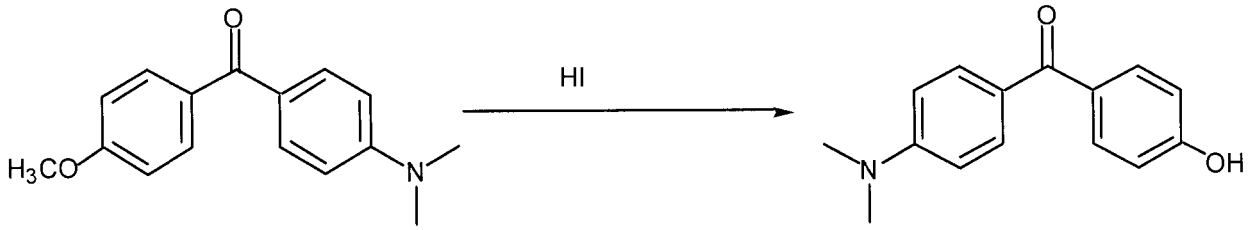
179. (Original) The method of synthesis of the compound of claim 173 wherein the cyclized oxamido-tetraarylpolymethine A-B compound is a 1,5-(4,4'-(2,2'-N,N'-disulfonyloxamidodiethoxy)phenyl-1,5-diarylpentadiene cation derivative.

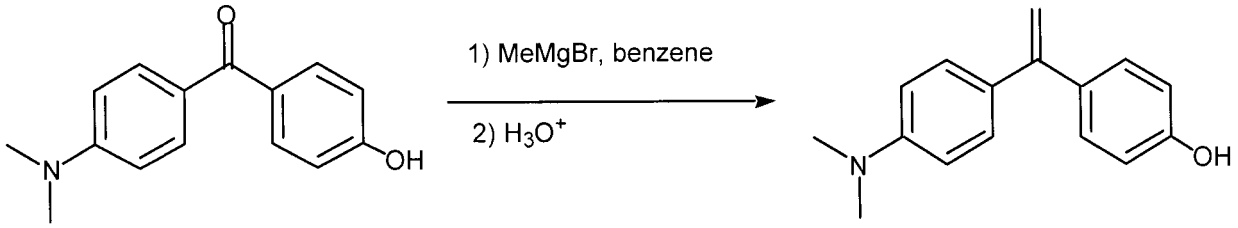
180. (Original) The method of synthesis of the compound of claim 173 further comprising the step of reacting the B functionality with one nucleophilic species of a C functionality such as Foscarnet to form A-B-C.

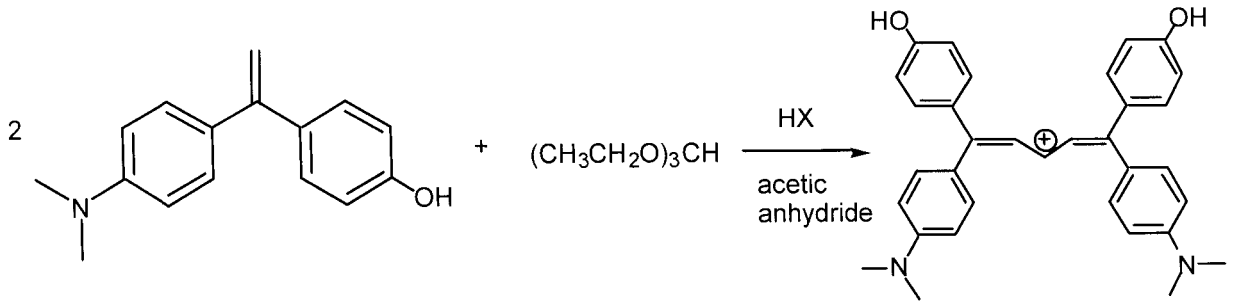
181. (Currently Amended) The method of synthesis of the compound of claim 173 comprising the general steps given by following representative formula

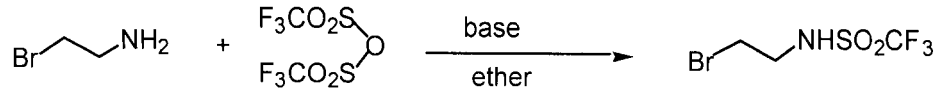

O
Cl
+
H_2N
K_2CO_3
H_3CO
O
N
H
H_3CO

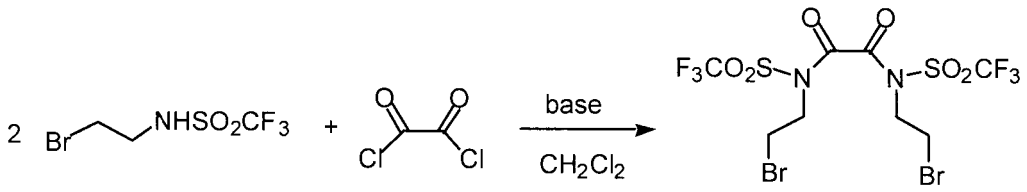

O
N
H
H_3CO
+
N
1) $POCl_3$
2) H_3O^+
O
H_3CO
N


O
H_3CO
N
HI
O
N
OH


O
N
OH
1) MeMgBr, benzene
2) H_3O^+
N
OH


2
N
OH
+
$(CH_3CH_2O)_3CH$
HX
acetic
anhydride
HO
OH
⊕
N
N





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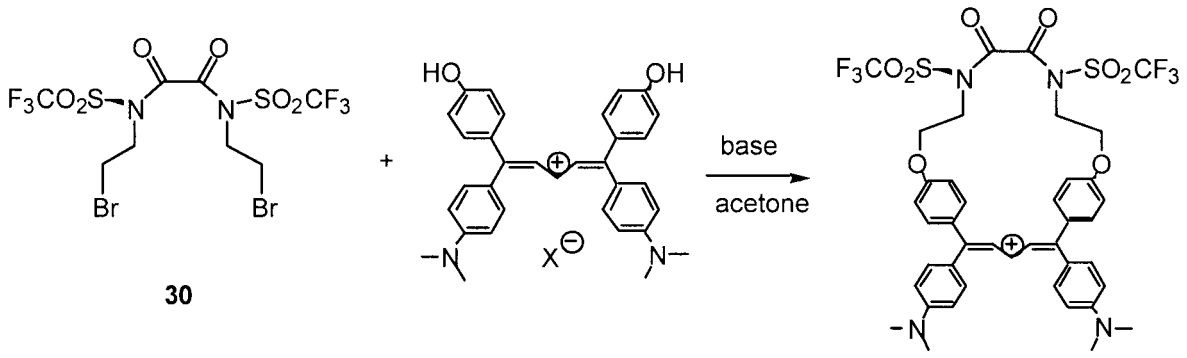

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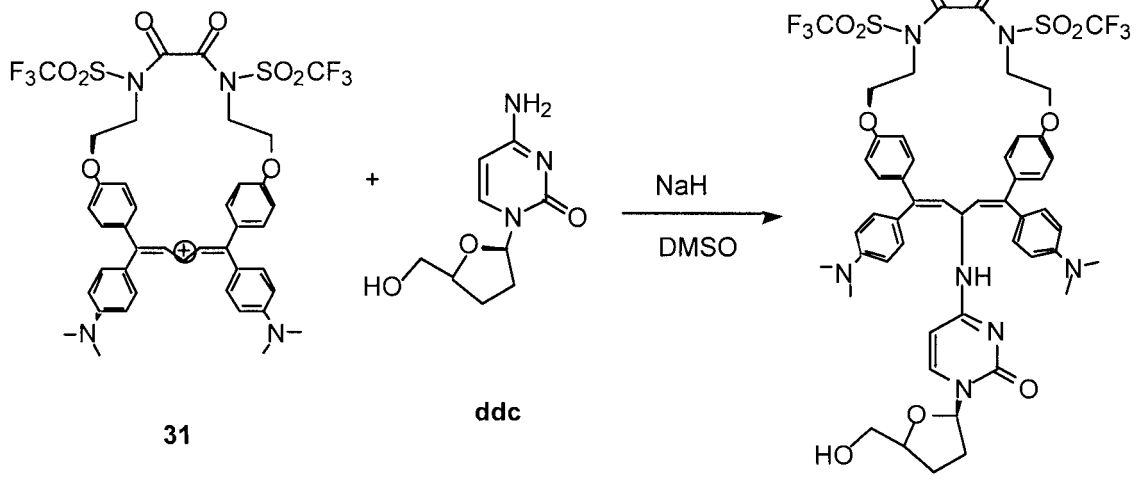

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ddc

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Claims 182-227 (Cancelled)

228. (New) The method of synthesis of the compound of claim 10 wherein the C moiety is at least one or a derivative or analog of one of the group of

prostaglandins

prostaglandin A_1 A_2 B_1 E_1, E_2 or an analog which possesses a vasodilatory effect on coronary arteries and other human vascular beds

prostaglandin E, F, A or an analog which possesses a positive cardiac inotropic effect

prostaglandin A, E, or an analogue prostaglandin which possesses natriuretic and diuretic activity

prostaglandin A, G, E_1, E_2 or an analogue such as 15(S)-15-methyl PGE 2 methylester, 16,16-dimethyl PGE2, AY-22,093, AY22,469, AY-22,443, or 15(R)-15-methyl PGE2 which inhibits gastric acid secretion

prostaglandin D_2, E_1 or an analogue which inhibits platelet aggregation

prostaglandin E_1, E_2 or an analogue which causes bronchial dilatation

prostaglandin F_2 or an analogue which causes abortion by luteolysis

prostaglandin A_2, E_1, E_2, or an analogue which induces erythropoiesis

prostaglandin E or an analogue which modulates T lymphocytes to decrease their ability to reject an allogenic graft

2'-isopropyl-4'-(trimethylammonium chloride)-5'-methylphenyl piperidine -1-carboxylate (Amo 1618) or an analog which inhibits the cyclization of trans-geranyl-geranyl-PP to copalyl-PP during Kaurene synthesis

adenosine cyclic 3', 5'-monophosphate or an analogue which inhibits the release and formation of phlogistic mediators such as histamine and kinins

4'-sulfamylphenyl

2-azo -7-acetamid-1-hydroxynaphthalene-3,6-disulfonate (Neoprontosil), 4'-sulfamyl-2, 4-diaminoazobenzene (Prontosil), or 5-(p-sulfamylphenylazo) salicylic acid (Lutazol) or analog which possess potent carbonic acid anhydrase inhibition

analogue of S-adenosyl homocysteine or sinefungin

phosphoglycolohydroxamate which inhibits Class II aldolases present in bacterial and fungi and is noninhibitory of Class I aldolases present in animals,

inosine analogue such as formycin B which inhibits nucleotide phosphorylase during nucleotide metabolism

phosphonoformate (Foscarnet) or an analog which inhibits the HIV reverse transcriptase enzyme

γ-amino-butyric acid (GABA) or an analog which is the major inhibitory neurotransmitter in the mannalian central nervous system

gabaculine, N-(5'-phosphopyridoxyl)-4-aminobutyric acid, ethanolamine-o-sulfate, γ-vinyl GABA, or α-acetylenic GABA or an analog that is an inhibitor of the GABA-degrading enzyme, GABA: 2-oxoglutarate aminotransferase

Baclofen or a compound that inhibits GABA release

an oligonucleotide which binds to RNA or DNA and blocks transcription or translation of HIV or P-glycoprotein gene products adenosine which binds to brain purinergic receptors to suppress opiate withdrawal

adensoine whihc causes coronary vasodilatation

3-hydroxy-3-methylglutarate, 3-hydroxybutyrate, 3-hydroxy-3-methylpentanoate, 4-bromocrotonyl-CoA, but-3-ynoyl-CoA, pent -3-ynoyl-CoA, dec -3-ynoyl-CoA, ML-236A, ML-236B (compactin), ML-236C, mevinolin, mevinolinic acid, or a mevalonic acid analogue which is an inhibitor of 3-hydroxy -3-methylglutaryl-CoA reductase which catalyzes the rate-limiting and irreversible step of cholesterol synthesis where inhibition at this step does not lead to the accumulation of nonmetabolizable precursors

thioinosinate which suppresses T lymphocytes

Suramin, which is a powerful inhibitor of energy driven calcium uptake by the sarcoplasmic reticulum and is an intracellular inhibitor of Na+ K+ ATPase where both activities increase intracellular calcium concentrations with a concomitant inotropic effect

norepinephrine N-methyltransferase inhibitor such as 2,3-dichloro-α-methylbenzylamine, 2,3-dichlorobenzylamine, 2,3-dichlorobenzamidine, or 3,4-dichlorophenylacetamidine

adenosine cyclic 3', 5'-monophosphate or a cAMP analogue which blocks the synthesis of fatty acids and cholesterol in the liver is an antilipidemic agent,

an inhibitor of dihydroxyphenylalanine decarboxylase during the synthesis of epinephrine and norepinephrine such as psitectorigenin, genistein, 3', 4',5,7-tetrahydroxy-8-methylisoflavone, orbol, 8-hydroxygenistein, 3',5,7-trihydroxy-4',6-dimethylisoflavone, 3',5,7-trihydroxy-4',8-dimethoxyisoflavone, D,L-B-(5-hydroxy-3-indolyl)-α-hydrazinopropionic acid, D,L-α-hydrazino-α-methyldopa, D,L-B-(3-indolyl), -α-hydrazinopropionic acid, a derivative of phenylalanine such as N-methyl-3,4-dopa, α-acetamido-3,4-dimethyoxycinnamic acid, DL-α-methyl-3,4-dopa, α-methyl-B-(3-hydroxy-4-methoxyphenyl)alanine, α-methyl- 3,4-dimethoxyphenylalanine, or d-catechin; D,L-B-(3- indolyl)-α-methyl-α-hydrazinopropionic acid (R)-3,3,4-dihydroxyphenyl-1-fluoropropylamine, (S)-α-fluoromethyldopa, (S)-α-fluoromethyltyrosine, 5-(3,4-dihydroxycinnamoyl) salicylic acid, 3-hydroxycinnamic acid, caffeic acid, 3-mercaptocinnamic acid, α-methyl-3-hydroxycinnamic acid, α-ethyl-3-

hydroxycinnamic acid, 3-hydroxy-w-nitrostyrene, 3,4-dihydroxyhydrocinnamic acid, 3-hydroxybenzalacetone, 3-hydroxychalone, 3-hydroxybenzal furanyl ketone, 3-hydroxybenzal thiophenyl ketone, 3',4'-dihydroxyflavone, 8-O-glucoseflavone, flavone, 3-hydroxyphenyl pyruvic acid, 3,4-dihydroxyphenylpyruvic acid phenylthiopyruvic acid, 4-hydroxyphenylpyruvic acid, dithiosalicyclic acid, 1-hydroxy-2-naphthoic acid, 3-hydroxy-7-sulfo-2-naphtholic acid, 3,5-dihydroxy-2-naphtholic acid, 4-chlorocinnamic acid, 2-chlorocinnamic acid, 2,4-dichlorocinnamic acid, 3-nitrocinnamic acid, 3,5-dibromo-2-hydroxycinnamic acid, 2,4,6-triiodo -3-hydroxycinnamic acid, 2-hydroxy-4'-cyanochalone, 4-(4-hydroxycinnamoyl) benzylnitrile, 2-(4-hydroxycinnamoyl)-1,4-dihydroxybenzene, quercetin-6'-sulfonic acid, 5-(2-hydroxy-3,5-dibromocinnamoyl) salicylic acid or 5-(3-hydroxycinnamoyl) salicylic acid

an inhibitor of acrosin, a proteolytic enzyme located in the acrosome of sperm, such as tosyl lysine chloromethyl ketone, N-α-tosyl-L-arginine chloromethyl ketone, or ethyl p-guanidinobenzoate,

adenosine cyclic 3',5'-monophosphate (cAMP), N^6 , O_2 -dibutyryladenosine cyclic 3',5'-monophosphate or an analogue which produces an inotropic response,

adenosine kinase enzyme inhibitor such as 6,6'-dithiobis (9-B-D-ribofuranosylpurine),

inhibitor of monoamine oxidase such as phenylhydrazine, phenylethylidenehydrazine, isopropyihydrazine, or iproniazid,

an inhibitor of catechol-o-methyltrasferase such as 3,5-diiodo-4-hydroxybenzoic acid, S-3'-deoxyadenosylL-homocysteine, pyrogallol, R04-4602, gallic acid, 3,5-dihydroxy-4-methylbenzoic acid, 1,3-dihydroxy-2-methoxybenzene, 1-hydroxy-2,3-dimethoxybenzene, 2-hydroxy-1,3-dimethoxybenzene, 1,3-dihydroxy-4-methoxybenzene, catechol, 3,4-dihydroxybenzoic acid, caffeic acid, 5,6-dihydroxyindole, noradnamine, dopacetamide, H 22/54, quercetin, nordihydroguaiaretic acid, U-0521, arterenone, methylspinazarin, MK 486, dopa, papaveroline, isoprenaline, 7,8-dihydroxy-chlorpromazine, 3-hydroxy-4-pyridone, tetrahydroi-soquinoline pyridoxal 5'-phosphate, iodoacetic acid, 3-mercaptotyramine, dehydrodicaffeic acid dilactone, methylspinazorin, 3',5,7-trihydroxy-4',6-dimeth-oxyisoflavone, 3',5,7-trihydroxy-4',8-dimeth-oxyisoflavone, 6,7-dihydromethylspinazarin, S-adenosylhomocysteine, S-tubercidinylhomocysteine, 3',8-dihydroxy-4',6,7-trimethoxyisoflavone,7-O-methylspinochrome B, 6-(3-hydroxybutyl)-7-O-methylspinachrome B, 3,5-diiodosalicyclic acid, or pyridoxal-5'-phosphate,

an inhibitor of adenosine deaminase which blocks the metabolism of adenosine such as coformycin, arabinosyl-6-thiopurine, 6-methylthioinosine, 6-thioinosine, 6-thioguanosine, N_1-methyladenosine, N_6-methyladenosine, 2-fluorodeoxyadenosine, 2-fluoroadenosine, inosine, 2'-deoxyinosine, deoxycoformycin, 1,6-dihydro-6-hydroxymethyl purine ribonucleoside, erythro-9-

(2-hydroxy-3-nonyl)adenine, or 9-B-D-arabinofuranosyl-6-hydroxylaminopurine,

an inhibitor of adenylate kinase, 5'-nucleotidase, and adenosine translocase such as p^1 p^5 -diadenosine pentaphosphate, α,β-methylene adenosine diphosphate, and nitrobenzyl-6-thioinosine, respectively,

an inhibitor of γ-aminobutyric acid uptake such as D,L-2,4-diaminobutyric acid, D,L-B-hydroxy GABA, (-)-nipecotic acid, trans-4-aminocrotonic acid, cis-3-aminocyclopentane-1-carboxylic acid, trans-3-aminocyclopentane-1-carboxylic acid, B-guanidinopropionic acid, homohypotaurine, 4-aminopentanoic acid, homotaurine, B-alanine, imidazoleacetic acid, 6-aminohexanoic acid, D,L-carnitine, D,L-2,6-diaminopimetic acid, D,L-2-fluoro GABA, guanidino acetic acid, 2-hydrazinopropionic acid, taurine, D,L-ornithine, or sulphanilamine which potentiates the inhibitory action of GABA,

inositol 1,4,5-triphosphate,

guanosine 5' cyclic monophosphate or 8-bromo guanosine 5' cyclic monophosphate which relaxes smooth muscle,

an inhibitor of the uptake system for glycine, the inhibitory synaptic transmitter of the spinal cord, such as hydrazinoacetic acid,

isoquinoline-sulfonamide inhibitor of protein kinase C, cAMP-dependant protein kinase, or cGMP-dependent protein kinase such as N-(2-aminoethyl)-5-isoquino-linesulfonamide,

Ribavirin which is active against HSV-1 and 2, hepatitis, and influenza viruses, or phosphonoacetic acid which is a highly specific inhibitor of Herpes Simplex virus induced polymerase and is active against HSV-1 and HSV-2, or adenine arabinoside (ara-A), cytosine arabinoside (Ara-C), ara-A 5'-monophosphate (ara-AMP), or hypoxanthine arabinoside (ara-Hx) which is active against HSV or phagicin which is active against vaccinia and HSV, or 4-fluoroimidazole, 4-fluoroimidazole-5-carboxylic acid, 4-fluoroimidazole-5-carboxamide, 5-fluoro-1-B-D-ribofurano- sylimidazole-4-carboxamide, 5-amino-1-B-D-ribofuranosyl-imidazole-4-carboxamide, poly (I), poly (C), sinefungin, iododeoxyuridine, 9-(2-hydroxy-ethoxymethyl) guanine, gliotoxin, distamycin A, netropsin, congocidine, cordycepin, 1-B-D-arabinofuranosylthymine, 5,6-di-hydroxy-5-azathymidine, pyrazofurin, toyocamycin, or tunicamycin,

an inhibitor of fungal chitin synthetase such as polyoxin D, nikko-mycin Z, or nikkomycin X,

an impermeant antifungal agent such as ezomycin A_1, A_2, B_1, B_2, C_1, C_2, D_1, or D_2 or platenocidin, septacidin, sinefungin, A9145A, A9145C, or thraustomycin,

an inhibitor of central nervous system carbonic anhydrase such as methazolamide, or 2-benzoylimino-3-methyl-Δ^4 -1,3,4-thiadiazoline-5-sulfonamide subsgituted at the benzolyl group

with 3,4,5-trimethoxy, 2,4,6-trimethoxy, 2,4,5-trimethoxy, 4-chloro, 4-bromo, 4-iodo, or hydrogen,

an inhibitor of dopamine-B-hydroxylase during the synthesis of norepinephrine and epinephrine such as fuscaric acid, 5-(3',4'-dibromobutyl)picolinic acid, 5-(3'-bromobutyl) picolinic acid, 5-(3',4'-dichlorobutylpicolinic acid, YP-279, benxyloxyamine, p-hydroxybenzyloxyamine, U-21,179, U-7231, U-6324, U-0228, U-5227, U-10,631, U-10,157, U-1238, U-19,963, U-19,461, U-6628, U-20,757, U-19,440, U-15,957, U-7130, U-14,624, U-22,996, U-15,030, U-19,571, U-18,305, U-17,086, U-7726, dimethyldithiocarbamate, diethyldithiocarbamate, ethyldithiocarbamate, 2-mercaptoethylguanidine, thiophenol, 2-mercaptoethylamine, 3-mercaptopropylguanidine, 3-mercap- toprbpyl-N-methylguanidine, 2-mercaptoethanol, 2-mercaptoethyl-N-methylguanidine, 2-mercaptoethyl-N,N'-dimethylguanidine, 4,4,6-trimethyl-3,4-dihydropyrimidine-2-thiol, N-phenyl-N'-3-(4H-1,2,4-trizolyl)thiourea, methylspinazarin, 6,7-dimethylspinazarin, 7-O-methy-spinochrome B, 6-(3-hydroxybutyl)-7-O-methylspinachrome B, aquayamycin, chrothiomycin, frenoclicin, N-n-butyl-N'-3-(4H-1,2,4-trazolyl) thiourea, propylthiouracil, mimosine, mimosinamine, or mimosinic acid,

an inhibitor of histidine decarboxylation during the synthesis of histamine such as 2 -hydroxy-5-carbomethoxybenzyloxyamine, 4-toluene-sulfonic acid hydrazide, 3-hydroxy benzyloxyamine, hydroxylamine, aminooxyacetic acid, 4bromo-3-hydroxybenzyloxyamine (NSD-1055), rhodanine substituted in the 3 position with p-chlorophenethyl, p-chlorobenzyl, p-methylthiobenzyl, p-methylbenzyl, p-fluorobenzyl, amino, 3,4-dichlorobenzyl, p-bromobenzyl, p-methoxybenzyl, p-bromoanilino, p-iodoanilino, p-chloroanilino, p-toluidino, anilino, 2,5-dichloroanilino, dimethylamino, or p-methoxyphenyl; 2-mercaptobenzimidazole-1,3-dimethylol, 4-bromo-3-hydroxy -benzoic acid, 4-bromo-3-hydroxybenzyl alcohol, 4-bromo-3-hydroxy-hippuric acid, (R,S)-α-fluoromethyl- histidine, (S)-α-fluoromethylester, L-histidine ethyl ester, L-histidinamide, D,L-3-amino-4-(4-imidazolyl)-2-butanone, 2-bromo-3-hydroxybenzyloxyamine, 5-bromo-3-hydroxybenzyloxyamine, 4,6-dibromo-3-hydroxybenzyloxyamine, aminooxypropionic acid, benzyloxyamine, 4-bromo-3-benzenesulfonyloxybenzyloxyamine, 3',5,7-trihydroxy-4',6-dimethoxyisoflavone, lecanoric acid, N-(2,4-dihydroxybenzoyl)-4-aminosalicylic acid, or 3',5,7-trihydroxy-4',8-dimethoxyisoflavone,

an pharamaceutical aget of drug that appear in Physicians Desk Reference, Edward R. Barnhart, 41th ed., 1987, Medical Economics Company Inc., N.J.; USAN and the Dictionary of Drug Names, ed. by Mary C. Griffiths, The United States Pharmacopedial Convention, (1986); and The Pharmacological Basis of Therapeutics, ed. by A.G. Gilman, L. Goodman, A. Gilman, 7th ed., (1985), MacMillan Publishing Co., N.Y., N.Y.,

a centrally acting converting enzyme inhibitor such as captopril,

an antibacterial agent such as penicillin, cephalosporin, or cephamycin, with β-lactamase resistance,

an agent which blocks bacterial synthesis of tetrahydrofolate such as a sulfonamide (an analogue of p-aminobenzoic acid) including sulfanilamide, sulfadiazine, sulfamethoxazole, sulfisoxazole, or sulfacetamide

an inhibitor of dihydrofolate reductace including pyrimethamine, cycloguanil, trimethoprin, isoaminopterin, 9-oxofolic acid, or isofolic acid,

a bactericidal agent such as nalidixic acid or oxolinic acid,

an inhibitor of bacterial protein synthesis such as vancomycin, an aminogylcoside, erythromycin, tetracyclin, or chloramphenicol,

an inhibitor of viral DNA polymerase such as vidarabine,

tuberculostatic or tuberculocidal agent such as isoniazid or aminosalicyclic acid,

an anthelmintic agent such as oxamniquine, piperazine, metronidazole, diethylcarbamazine, paromomycin, niclosamide, bithionol, metrifonate, hycanthone, dichlorophen, or niclosamide,

an H_2 -blocking agent such as cimetidine or ranitidine,

an agent which blocks release of norepinephrine such as sotalol, guanethidine, pindolol, pronethalol, KO 592, practolol, oxprenolol, or pronethalol,

a xanthine oxidase inhibitor such as allopurinol, thioinosinate, 5,7-dihydroxypyrazolo 1,5-pyrimidine substituted at the 3 position with hydrogen, nitro, bromo, chloro, phenyl, 3-pyridyl, p-bromophenyl, p-chlorophenyl, p-acetylanilino, p-tolulyl, m-tolulyl, naphthyl, or 3,4-methylenedioxyphenyl; 8-(m-bromoacetamidobenzylthio)hypoxanthine, 8-(m-bromoacetamidobenzylthio)hypoxanthine, guanine substituted at the 9 position with phenyl, 4-chlorophenyl, 3-chlorophenyl, 3,4-dichlorophenyl, 4-methoxyphenyl, 3,4-dimethoxyphenyl, 4-dimethylaminophenyl, 4-aminophenyl, 3-aminophenyl, 3-trifluormethylphenyl, 4-benzamido, 4-carboxylphenyl, 4-methylpheyl, 4-ethylphenyl, 3-methylphenyl, B-naphthyl, or 4-ethoxyphenyl; 4,6-dihydroxypyrazolo 3,4-d pyrimidine, 4-trifluoromethylimidazoles substituted at the 2 position with phenyl, p-chlorophenyl, p-methoxyphenyl, p-acetylanilino, p-nitrophenyl, p-dimethylaminophenyl, p-cyanophenyl, p-fluorophenyl, p-carboxyphenyl, m-chlorophenyl, 3,4-dichlorophenyl, 4-pyridyl, 3-pyridyl, 2-quinolyl, 6-quinolyl, 4-quinolyl, 7-quinolyl, 2-pyrazinyl, or 1-(2-pyridyl-4-trifluoromethyl-5-bromoimidazolyl; 5-(4-pyridyl)-1,2,4-triazoles substituted at the 5 position with 4-pyridyl, 3-pyridyl, 2-pyridyl, phenyl, p-chlorophenyl, m-chlorophenyl, p-sulfonamidophenyl, 3,5-dichlorophenyl, 3,5-dicarboxyphenyl, 6-quinolyl, 2-furyl, 4-pyridazinyl, 2-thienyl, 2-pyrimidinyl, 4-pyrimidinyl, or 4-pyrazinyl; difunisal, 4(or 5)-(2-aminoethylthio-azo)imidazole-5(or 4)-carboxamide, 4 (or 5)-diazoimidazole-5(or 4)-carboxamide , or S-õ5(or

4)-carbamoyl-4(or 5)-imidazolyl azo cysteine,

an agent which inhibits DNA synthesis such as a bis-thiosemicarbazone, 3,5-diisopropylsalicyl- hydroxamic acid, 4-hydroxybenzoylhydroxamic acid, 3-methylsalicylhydroxamic acid 2,5-dihydroxybenzoylhydroxamic acid, or 2-hydroxy-3,4,5-trimethoxybenzoylhydroxamic acid; or which inhibits nucleotide synthesis such as N-(phosphoacetyl)-L-aspartate which inhibits asparatate transcarbamylase during pyrimidine synthesis, or azaserine or 6-diazo-5-oxo-L-norleucine which inhibits purine synthesis at the phosphoribosyl-formyl-glycineamidine synthetase step; or which is an antifolate such as methotrexate, 2,4-diamino-5-benxyl-6-(4-phenylbutyl) pyrimidine, 2,4-diamino-5-phenyl-6-(4-phenylbutyl) pyrimidine, 2,4-diamino-5-phenyl-6-(3-anilinopropyl) pyrimidine, 2-amino-4-hydroxy-5-phenyl-6-(3-p-aminobenzoylglutamic acid propyl) pyrimidine, N-(p-oo(2,4-diamino-6-quinazolinyl)methyl-methylamino- benzoyl-L-glutamic acid, N-p-2,4-diamino-5-methylquinazolinyl)methylaminobenzoyl-L-aspartic acid, N-p-(2-amino-4-hydroxy-6-quinazolinyl) methyl-methylamino benzoyl-L-glutamic acid, 2,4-diaminoquinazolines: CCNSC 105952, CCNSC 112846, CCNSC 121346, CCNSC 122761, CCNSC 122870, CCNSC 529859, CCNSC 529860, or CCNSC 529861; 8-aza GMP, 7-deaza-8-aza GMP, 2'-dGMP, B-D-arabinosyl GMP, pentopyranine A-G, B-ribofuranosyl-1,3-oxazine-2,4-dione, pyrazofurin, 6-(p-chloroacetylanilinomethyl)-5-cetylvinylanilinomethyl)-5-(p-chlorophen yl)-2,4-diaminopyridine, 6-(p-chloroacetyl- ethylanilino-methyl)-5-(p-chlorophenyl)-2,4-diamino pyridine, 6-(p-chlorophenylbutylanilinomethyl)-5-(p-chlorophenyl)-2,4-diamino pyridine, p-(2,6-diamino-1,2-dihydro-2, 2-dimethyl- S-triazin-1-yl) phenylpropionyl sulfanilylfluoride or variants of the propionamide bridge of acrylamido, N-ethylsulfonamido, N-ethylcaboxamido, oxyacetamido, or oxythyloxy; or which inhibits purine or pyrimidine synthesis such as xylosyladenine, 6-azauridine, 5-aminouridine, 5-azaorotic acid; or which inhibits nucleotide interconversion such as hadacidin, 6-mercaptopurine, azathioprine, nitro-dUMP, psicofuranine, decoyinine, 5-fluorouracil, 5-fluorodeoxyuridine, shadowmycin; or which inhibits nucleotide utilization such as cytosine arabinoside, arabinosyladenine; or which becomes incorporated into polynucleotides such as 8-azaguanine, tubercidine, toyocamycin, sangivamycin, formycin, 7-deazainosine, 8-azainosine, or 7-thia-7, 9-dideazainosine; or which is a glyoxalase inhibitor such as Glyo-I, or Glyo-II,

an agent which blocks synthesis of prostaglandin A_2 which effects platelett aggregation such as salicylic acid, pyrogallol, 5,8,11,14-eicosatetraynoic acid, α-naphthol, guaiacol, propylgallate, nordihydroguiaretic acid, N-0164, benzydamine, 9,11-azoprosta-5, 13-dienoic acid, 2-isopropyl-3-nicotinylindole,

an agent which blocks prostaglandin synthetase such as indomethacin, sulindac, tolmetin,

mefenamic acid, ibuprofen, naprozen, fenoprofen, fluribiprofen, ketoprofen, meclofenamic acid, flufenamic acid, niflumic acid, benzydamine, oxyphenbutazone, asprin, acetaminophen, salicylamide, O-carboxydiphenylamine, tolectin, diclofenac, 2,7-dihydroxynaphthalene, 5-(4-chlorobenzoyl)-1-methylpyrrole-2-acetic acid, 5-(4-methylbenzoyl)-1,4-dimethylpyrrole-2-acetic acid, 5-(4-chlorobenzoyl)-1,4-dimethylpyrrole-2-acetic acid, 5-(4-fluorobenzoyl)-1,4-dimethylpyrrole-2-acetic acid, 5-(4-chlorobenzoyl)-1,4-dimethylpyrrole-2-(2-propionic acid), 5,6-dehydroarachidonate, 11,12-dehydroarachidonate, or 5,8,11,14-eicosatetraynoate; or of an agent which blocks lipoxygenase or blocks leukotriene action such as BW755C, FPL 55712, or U-60,257

an antiarrhythmic agent such as procainamide or quinidine,

an inhibitor of hepatic synthesis of Vitamin K dependent clotting factors such as warfarin sodium, dicumarol, 4-hydroxycoumarin, phenprocoumon, or acenocoumarol,

an agent which relaxes vascular smooth muscle such as hydralazine, minoxidil, or isoxsuprine,

Na^+ K^+ -ATPase inhibitor such as digtoxigenin, digoxigenin, cymarol, periplogenin, or strophanthidiol, or ouabain glycosides, cardenolides, or basic esters, or ICI-63,632, ICI-63,605, ICI-62-655, ICI-62,838, ICI-69,654, ICI-58,622, ICI-61,374, ICI-57,267, ICI-61,424, ICI-61,411, ICI-65,199, ICI-70,898, ICI-70,899, ICI-70,900, ICI-70,901, ICI-62,966, ICI-65,210, ICI-63,116, ICI-62,936, ICI-65,551, ICI-63,978, ICI-62,276, ICI-63,056, ICI-67,135, ICI-67,167, ICI-67,134, ICI-67,875, ICI-67,880, or ICI-61,558,

a calcium channel blocker such as prenylamine, verapamil, fendiline, gallopamil, cinnarizine, tiapamil, diltiazem, bencyclan, or nifedipine; or an agent which stabalizes calcium binding to cellular calcium stores and thereby inhibits the release of this calcium by contractile stimuli such as 8-(N,N-diethylamino)-octyl 3,4,5-trimethoxybenzoate (TMB-8),

a monoamine oxidase inhibitor such as tranylcypromine, phenylethylamine, trans-cinnamic acid, phenelzine, or isocarboxazid,

a benzodiazepine compound such as clorazepate,

valproic acid,

an agent which causes repression of the synthesis of HMG-COA reductase such as 20-α-hydroxycholesterol, 22-ketocholesterol, 22-α-hydroxycholesterol, 25-hydroxycholesterol, 22-β-hydroxycholesterol, 7-α-hydroxycholesterol, 7-β-hydroxycholesterol, 7-ketocholesterol, or kryptogenin; or of an agent which inhibits HMG-COA reductase such as, lorelco; or of an agent which inhibits lipolysis such as 5-methylpyrazole -3-carboxylic acid (U-19425), nicotinic acid, uridine, inosine, 3,5-dimethylisoxazole (U-21221), 3,5-dimethypyrazole, prostaglandin E_2, eritadenine, or eritadenine isoamyl ester; or of an agent which inhibits lipogenesis such as

ascofuranone, (-)-hydroxycitrate, or tetrolyl-CoA; or of an agent which is hypocholesterolemic such as lentysine; or of an agent which lowers triglycerides such as lopid; or of an agent which is an inhibitor of acetyl-CoA carboxylase during lipogenesis such as 2-methyl -2-p-(1,2,3,4-tetrahydro-1-naphthyl)-phenoxy-propionate (SU13437), 2-(p-chlorophenoxy)-2-methylpropionate, kynurenate, xanthurenate, kynurenine, 3-hydroxyanthranilate, or 2-methyl-2-p-(p-chlorophenyl)phenoxypropionate; or of an agent which is an inhibitor of hepatic β-lipoprotein production such as orotic acid,

a vasodilater such as WS-1228A, or WS-1228B; or of an anti-inflammatory agent such as amicomacin A,

a protease inhibitor such as leupeptin; or which is an inhibitor of pepsin such as a pepstatin, a pepstanone, or a hydroxypepstatin,

an inhibitor of cell surface enzymes such as bestatin, amastatin, forphenicine, ebelactone, or forphenicin,

a phosphodiesterase inhibitor such as theophyllineacetic acid, theophylline, dyphylline, disodium cromoglycate, 6-n-butyl-2,8-dicarboxy-4,10-dioxo-1,4,7,10-tetrahydro-1,7-phenanthrolin, 2-chloroadenosine, dipyridamole, EG 626, AY-17,605, AY-17,611, AY-22,252, AY-22,241, cis-hinokiresinol, oxy-cis-hinokiresinol, tetrahydro-cis- hinokiresinol, trans-hinokiresinol, dehydrodicaffeic acid, 2,6,4'-trihydroxy-4-methoxybenzophenone, p-hydroxyphenyl crotonic acid, papaverine, 3-(5-tetrazolyl)-thioxanthone-10,10-dioxide, 3-carboxythioxanthone-10,10-dioxide, W-7, HA-558, MY-5445, OPC-3689, OPC-13135, or OPC-13013, reticulol, PDE-I, or PDE-II,

an inhibitor of tyrosine hydroxylase, the enzyme catalyzing the rate-limiting reaction in the biosynthesis of norepinephrine, such as azadopamine, isopropylazadopamine, dimethylazadopamine; triphenolic compounds such as n-propylgallate; diphenolic benzoic acid derivatives such as 3,4-dihydroxybenzoic acid; phenylcarbonyl derivatives such as 3,4-dihydroxybenzaldehyde, arterenone, or adrenalone H 22/54, 3-iodo-L-tyrosine, D,L-α-methyl-p-tyrosine, L-3-iodo-α-methyltyrosine, 3-bromo-α-methyltyrosine, gentistic acid, 3-chloro-α-methyltyrosine, phenylalanine derivatives, 3,5-diiodo- L-tyrosine, 3,5-dibromo-L-tyrosine, 3-bromo-α-methyl-L- tyrosine, 3-fluro-α-methyl-L-tyrosine, catechol analogues, 3,4-dihydroxyphenylethylacetamide, 3,4-dihydroxyphenyliso- proplyacetamide, 3,4-dihydroxyphenylbutylacetamide, 3,4-di-hydroxyphenylisobutylacetamide, D,L-α-methylphenylalanine, D,L-3-iodophenylalanine, D,L-4-iodophenylalanine, D,L-α-methyl-3-iodophenylalanine, D,L-a-methyl-3-bromophenylalanine, D,L-α-methyl-3-chlorophenylalanine, D,L-α-methyl-3-fluorophenylalanine, mimosine, mimosinamine, mimosinic acid, 7-O-methylspinochrome B, 6-(3-hydroxybutyl)-7-O-methylspinachrome B, aquayamycin,

chrothiomycin, frenolicin, fuscaric acid, pentylpicolinic acid, dopstatin, methylspinazarin, 6,7-dihydroxymethylspinazarin, 3-ethyl-α-methyltyrosine, 3-methyl-α-methyltyrosine, 3-isopropyl-x-methyltyrosine, 3-allyl-α-methyltyrosine, 3-4-hydroxy-3-(2-methylallyl)-phenyl-2-methylalanine, 3-3-(2,3-epoxypropyl)-4-hydroxyphenyl-2-methylalanine, 3-isobutyl-α-methyltyrosine, 3-methylvinyl-α-methyltyrosine, 5-methyl-6,7-diphenyltetrahydropterin, 3-(2,3-dihydro-2,2-dimethyl-5-benzofuranyl-2-methylalanine, 3-2,3-dihydro-2,2-dimethyl-5-benzofuranyl-2-methylalanine, α-methyldopa, or ethyl-3-amino-4H-pyrrolo 3,4-isoxazole carboxylate, and

proteins including enzymes and hormones such as insulin, erythropoietin, interleuken 2, interferon, growth hormone, atrial natriuretic factor, tissue plasminogen activator.

229. (New) The method according to claim 1, wherein the phthalhydrazide comprises at least one selected from the group consisting of phthalimide, aminophthalic acid diester, aminophthalic acid dihydrazide, aminophthalic anhydride and phthalhydrazide protected by a hydrolyzable group.